



INTERDISCIPLINARY CENTRE FOR  
ADVANCED MATERIALS SIMULATION

The ICAMS Seminar presents

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## **Sintercladding - A Novel Process for Wear Resistant Coatings**

For protecting engineering components against abrasive wear of coarse particles, several technical solutions are known, for instance build-up welding, thermal spraying or hot isostatic pressing of layered structures (HIP-cladding). In general, wear resistant particulate reinforced metal matrix composites (MMC) offer superior properties for specific applications compared to wear resistant materials commonly used, e.g. white cast iron. Typical MMCs are processed using a powder of high alloyed tool steel mixed with a certain volume fraction of coarse hard particles (carbides, nitrides or borides) and consolidated by hot isostatic pressing (HIP).

Sintercladding is a novel process, that was developed to combine the major advantage of HIP cladding - the ability to produce crack-free layers of several millimeters in thickness - with lower costs. The process is based on powders of high-alloyed tool steels and ceramic particles. The powdery components are mixed and applied to surfaces within a comparatively short vacuum sintering process followed by a vacuum heat treatment. The resulting coatings exhibit properties comparable to those produced by HIP cladding. The production of semi-finished products as well as sintered thick coatings will be presented here.